

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application.

1. (Currently Amended) ~~An audio-based~~ A sound wave-based tracking system comprising:  
a speaker at a fixed location for transmitting ~~an audio~~ a signal having a given frequency above an audible range;  
a plurality of microphones mounted upon an object for receiving said ~~audio~~ signal; and  
a computing device for determining at least one of a position and an orientation of said object as a function of a delay of said ~~audio~~ signal received by each of said plurality of microphones.

2. (Canceled).

3. (Currently Amended) The ~~audio-based~~ sound wave-based tracking system according to Claim 1, wherein said ~~audio~~ signal comprises a marker and wherein said delay is determined as a function of ~~receipt of a~~ delay between said marker received by each of said plurality of microphones.

4. (Currently Amended) The ~~audio-based~~ sound wave-based tracking system according to Claim 1, wherein said delay is determined as a function of a time delay ~~of~~ between said ~~audio~~ signal received by each of said plurality of microphones.

5. (Canceled).

6. (Currently Amended) The ~~audio-based~~ sound wave-based tracking system according to Claim 1, wherein said plurality of microphones communicate wirelessly with said computing device.

7. (Currently Amended) A method of tracking comprising:  
transmitting a first ~~audio~~ non-audible signal from a first speaker;  
receiving said first ~~audio~~ non-audible signal at a plurality of microphones;  
determining a delay of said received first ~~audio~~ non-audible signal for each of said plurality of microphones; and  
determining at least one of a relative position and a relative orientation of said plurality of microphones as a function of said determined delay.

8. (Currently Amended) The method of tracking according to Claim 7, further comprising:

transmitting said first ~~audio~~-non-audible signal from said first speaker during a first period of time;

transmitting said first ~~audio~~-non-audible signal from a second speaker during a second period of time;

receiving said first ~~audio~~-non audible signal from said second speaker at said plurality of microphones;

determining a plurality of delays of said received first ~~audio~~-non-audible signal for each of said plurality of microphones during said first and second periods of time; and

determining at least one of said relative position and said relative orientation of said plurality of microphones as a function is said determined plurality of delays.

9. (Currently Amended) The method of tracking according to Claim 7, wherein said first ~~audio~~-signal comprises a sine wave having a first frequency.

10. (Currently Amended) The method of tracking according to Claim 7, further comprising:

transmitting a second ~~audio~~-non-audible signal from a second speaker;

receiving said second ~~audio~~-non-audible signal from said second speaker at said plurality of microphones;

determining a delay of said received second ~~audio~~-non-audible signal for each of said plurality of microphones; and

determining at least one of said relative position and said relative orientation of said plurality of microphones further as a function of said determined delay of said received second ~~audio-non-audible~~ signal.

11. (Currently Amended) The method of tracking according to Claim 10, wherein said second ~~audio-non-audible~~ signal comprises a sine wave having a second frequency.

12. (Currently Amended) The method of tracking according to Claim 7, ~~wherein said determined at least one of said relative position and said relative orientation controls further~~ comprising controlling a cursor of a computing device as a function of said determined at least one of said relative position and said relative orientation.

13. (Currently Amended) The method of tracking according to Claim 7, ~~wherein said determined at least one of said relative position and said relative orientation controls further~~ comprising controlling an application executing on a computing device as a function of said determined at least one of said relative position and said relative orientation.

14. (Currently Amended) A computing system comprising:  
a plurality of microphones mounted on an assembly, said assembly for mounting on an object;

a speaker for generating a sound wave at ~~an above-audible~~ a frequency above the audible range;

a computing device coupled to control said speaker and coupled to receive signals from said plurality of microphones, said computing device for determining at least one of a relative position and a relative orientation of said assembly based on delay differences of said signals.

15. (Original) The computing system as described in Claim 14, wherein said computing device is a personal computer and wherein said personal computer is wirelessly coupled to said plurality of microphones.

16. (Original) The computing system as described in Claim 14, wherein said computing device is a game console and wherein said game console is wirelessly coupled to said plurality of microphones.

17. (Original) The computing system as described in Claim 14, wherein said plurality of microphones comprise two microphones and wherein said determined at least one of said relative position and said relative orientation is within a single spatial plane.

18. (Original) The computing system as described in Claim 14, wherein said plurality of microphones comprise three microphones and wherein said determined at least one of said relative position and said relative orientation is within two spatial planes.

19. (Original) The computing system as described in Claim 14, wherein said computing device comprises a display screen and wherein said computing device translates said determined at least one of said relative position and said relative orientation into a cursor position on said display screen.

20. (Currently Amended) The computing system as described in Claim 14, wherein said sound wave is a sine wave.

21. (New) The tracking system according to Claim 1, wherein said signal comprises a marker and wherein said delay is determined as a function of a delay of said marker received by each of said plurality of microphones relative to said marker of a reference signal.

22. (New) The audio-based tracking system according to Claim 1, wherein said delay is determined as a function of a time delay of said signal received by each of said plurality of microphones relative to a reference signal.